

Low-temperature thermal decomposition of heavy petroleum distillates: Interconnection between the electrical properties and concentration of paramagnetic centres

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Abstract

© 2018 Institute of Physics Publishing. All rights reserved. Changes of paramagnetic centers (PC) concentration in petroleum dispersed systems (PDS) are studied in the process of low-temperature thermolysis. Complex investigation of physicochemical, rheological and electrophysical properties of high-boiling oil fractions is performed. Based on the analysis of the experimental results it can be concluded that the PDS under investigation can be regarded as amorphous broadband organic semiconductors for which PC plays a role of dopant. It shows the perspectives of the asphaltenes usage as a basis for the photovoltaic devices.

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